

**Applicant Initiated Interview Request Form**Application No.: 10/522,165  
Examiner: KillmanFirst Named Applicant: Schneider  
Art Unit: 1794 Status of Application: Under Final**Tentative Participants:**(1) Examiner (2) Attorney Abel  
(3) \_\_\_\_\_ (4) \_\_\_\_\_Proposed Date of Interview: 13 January, 2010Proposed Time: 9:00 AM (AM/PM)**Type of Interview Requested:**(1) ☒ Telephonic (2) ☐ Personal (3) ☐ Video ConferenceExhibit To Be Shown or Demonstrated: ☐ YES ☒ NO

If yes, provide brief description: \_\_\_\_\_

**Issues To Be Discussed**

Issues (Rej., Obj., etc)	Claims/ Fig. #s	Prior Art	Discussed	Agreed	Not Agreed
(1) <u>Rej (§102/103)</u>	_____	<u>Phillipou artcl</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) _____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☒ Continuation Sheet Attached☒ Proposed Amendment or Arguments Attached**Brief Description of Arguments to be Presented:**Proposed new claims 16-25 are believed novel and non-obvious over Phillipou, for the reason discussed on the attached continuation sheet.The examiner is authorized to communicate by e-mail for scheduling the interview, due to undersigned being located in Norway.

An interview was conducted on the above-identified application on \_\_\_\_\_.

**NOTE:** This form should be completed by applicant and submitted to the examiner in advance of the interview (see MPEP § 713.01).

This application will not be delayed from issue because of applicant's failure to submit a written record of this interview. Therefore, applicant is advised to file a statement of the substance of this interview (37 CFR 1.133(b)) as soon as possible.

\_\_\_\_\_  
Applicant/Applicant's Representative Signature

Christian D. Abel

Typed/Printed Name of Applicant or Representative  
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Registration Number, if applicable

\_\_\_\_\_  
Examiner/SPE Signature

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This collection of information is required by 37 CFR 1.133. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 21 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

*If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.*

## CONTINUATION SHEET – INTERVIEW

### ARGUMENTS AND PROPOSED NEW CLAIMS

The newly presented claims are believed to distinguish the invention over the cited reference to Phillipou. Phillipou discloses a glue used for the manufacture of particle board from wood chips. The glue disclosed in Phillipou comprises mixtures of ammonium lignosulfonate and furfuryl alcohol in various relative proportions, with maleic anhydride disclosed as an optional polymerization catalyst. The wood chips are first treated with hydrogen peroxide, which Phillipou discloses as necessary to cause the glue to bond to the surface of the wood chips. Without such treatment, no bonding to the surface was observed.

#### Rejections under 35 USC §102

The following features from the newly added claims are absent from Phillipou, thus the claim is believed novel:

##### Claim 16:

- a. Phillipou does not disclose a water soluble lignin derivative used as a solubility stabilizer. In Phillipou ammonium lignosulfonate is not used as a stabilizer, but as a polymerizing material. (See Phillipou at page 2, fourth paragraph, "Furfuryl alcohol, ammonium lignosulfate....were used as polymerizing materials"
- b. Phillipou does not disclose submerging a piece of wood in a treating formulation.
- c. Phillipou does not disclose subjecting a submerged piece of wood to pressure from 1-10 bar.

##### Claim 17:

Phillipou does not disclose sodium carbonate as a stabilizer.

##### Claim 18:

Phillipou does not disclose a combination of sodium bicarbonate + lignin derivative as a stabilizer.

##### Claim 19, 20:

Phillipou does not disclose the claimed concentrations of an aqueous treating solution.

##### Claim 21:

Phillipou does not disclose a vacuum step.

Claim 22:

Phillipou does not disclose that the piece of wood being treated is a piece of lumber, but rather wood chips.

Claim 23:

Phillipou does not disclose a full cell impregnation process performed in an impregnation vessel, but rather a graft polymerization in which glue is sprayed on the chips such that the polymer binds to the surface of the wood chips (after treatment with an activator).

Claim 24:

Phillipou does not disclose a wood product made by the claimed process. The resulting product, having been submerged and subjected to pressure would necessarily and inevitably be materially different than a graft polymerization product in which a surface bond is formed by hydrogen peroxide surface activation as in Phillipou.

Claim 25:

The product of Phillipou is not an impregnated piece of lumber, but bonded wood chips.

#### Rejections under 35 USC §103

##### **Lack of prima facie case of obviousness**

The examiner has not cited any combination of references that supply the missing features noted above. Therefore a prima facie case of obviousness has respectfully not been established. In particular the examiner has not shown a combination of references in which (for claim 16) a piece of wood is submerged in a the claimed formulation and subjected to a pressure step. Nor has a combination of references been shown that teaches the stabilizers of claims 17/18, nor the concentrations of claim 19/20, nor a vacuum step of claim 21 or that a piece of lumber is submerged in the formulation as in claim 22. With respect to claim 23, no combination of references is shown that would teach a full-cell impregnation process performed in an impregnation vessel as in claim 23.

In any event, the newly presented claims are believed not obvious in light of Phillipou. As noted above, Phillipou discloses a glue for making particle board, not a method of impregnating and treating lumber. The glue of Phillipou is applied to the surface, and only bonds after a surface activator is applied. Phillipou makes no disclosure of submerging a piece of wood in a treating solution and does not disclose the step of applying pressure or a vacuum. It is not

believed obvious for one skilled in the art to modify Phillipou to meet the features of the present claims. Such a modification would in fact make Phillipou inoperable for its intended purpose, as it would be impossible to make a particle board by Phillipou's method by submerging wood chips in the glue and applying a pressure step. With respect to feature of the wood piece being a piece of lumber, Phillipou's adhesive would have no relevance since one would not manufacture a particle board by submerging a piece of lumber in glue. Since Phillipou contains no teaching of impregnation of any kind, one would not look to Phillipou for guidance in arriving at an impregnation method or product.

## PROPOSED CLAIMS FOR DISCUSSION AT INTERVIEW

1-15 (cancelled)

16. A method for impregnating a piece of wood, comprising submerging the piece of wood in a polymerizable furfuryl alcohol monomer mixture, said mixture comprising water, furfuryl alcohol, a stabilizer and an initiator, wherein the stabilizer is selected from the group consisting of sodium carbonate, sodium bicarbonate, sodium citrate, phosphates and water-soluble lignin derivatives, and the initiator is selected from the group consisting of maleic anhydride, phthalic anhydride, maleic acid, malic acid, phthalic acid, benzoic acid, malonic acid, ascorbic acid, boric acid, citric acid, zinc chloride, aluminum chloride, other cyclic organic anhydrides and acids, and combinations thereof, applying a pressure of from 1-10 bar in a pressure step, and curing the piece of wood in a curing step.

17. The method according to claim 16 wherein the stabilizer is sodium carbonate.

18. The method according to claim 16 wherein the stabilizer is a combination of sodium bicarbonate and a water-soluble lignin derivative.

19. The method according to claim 16, wherein the concentrations of the furfuryl alcohol, stabilizer and initiator, based on weight of water, are 2-90%, greater than zero -10%, and 0.4-5% respectively.

20. The method according to claim 19, wherein the concentrations of stabilizer and initiator are 0.2 – 4.75 % and 0.4-3.5% respectively.

21. The method according to claim 16 further comprising a vacuum step.

22. The method according to claim 16 wherein the piece of wood is a piece of lumber.

23. A method of impregnating wood in a full cell process, comprising the steps of:
- i) loading an impregnation vessel with wood and securing the wood so it will not float
  - ii) closing the vessel and drawing a partial vacuum,
  - iii) filling the vessel with a treating mixture, while maintaining vacuum, said treating mixture comprising water, furfuryl alcohol, a stabilizer and an initiator, wherein the stabilizer is selected from the group consisting of sodium carbonate, sodium bicarbonate, sodium citrate, phosphates and water-soluble lignin derivatives, and the initiator is selected from the group consisting of maleic anhydride, phthalic anhydride, maleic acid, malic acid, phthalic acid, benzoic acid, malonic acid, ascorbic acid, boric acid, citric acid, zinc chloride, aluminum chloride, other cyclic organic anhydrides and acids, and combinations thereof,
  - iv) pressurizing the submerged wood to a pressure in the range of 5 to 10 bar,
  - v) reducing pressure to 2 or 3 bar, and expelling the treating fluid with remaining pressure,
  - vi) releasing all pressure, opening door and removing treated wood.
24. An impregnated wood product made by the process of impregnating a piece of wood, comprising submerging the piece of wood in a polymerizable furfuryl alcohol monomer mixture, said mixture comprising water, furfuryl alcohol, a stabilizer and an initiator, wherein the stabilizer is selected from the group consisting of sodium carbonate, sodium bicarbonate, sodium citrate, phosphates and water-soluble lignin derivatives, and the initiator is selected from the group consisting of maleic anhydride, phthalic anhydride, maleic acid, malic acid, phthalic acid, benzoic acid, malonic acid, ascorbic acid, boric acid, citric acid, zinc chloride, aluminum chloride, other cyclic organic anhydrides and acids, and combinations thereof, applying a pressure of from 1-10 bar in a pressure step, and curing the piece of wood in a curing step.
25. The wood product according to claim 24, wherein the piece of wood is a piece of lumber.